



APPLICATION NOTE

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Product Family: EZ Text

Number: AN-EZ-006

Subject: How to connect an EZ Text Operator Interface Serially to an Hx-EBC controlled by an Entivity PC-based control system.

Date Issued: 8/25/03

Revision: Original

INTRODUCTION

This application explains the process of connecting an EZ-Text panel to Entivity (Think & Do) Studio/Live H2,H4,T1H-EBC

APPLIES TO ENTIVITY (THINK & DO) VERSIONS

Entivity (Think & Do) Live Version 5.5 or higher is needed.

Entivity (Think & Do) Studio Version 6.5 or higher is needed

TOOLS NEEDED

1. EBC loaded with the latest firmware. Check HOST Engineering's website www.hosteng.com for latest firmware versions.
2. EZ-Text panel with firmware B.0 or higher (*All EZ Text panel models are supported*).
3. EZ-Text Edit software (*V2.0 or higher is required to work with all TnD Live and Studio versions*).
4. EZ-Text cables (*EZ-2CBL and EZTEXT-PGMCBL*).

QUICK NOTES

1. *Please refer to the Modbus Addressing Chart on page 5 of this document, it contains very important information about how your Entivity Project will be addressed in conjunction with your EZ Text panel.*
2. It is strongly suggested that you complete your TnD project prior to importing your TnD MAP file. (*The MAP file contains all the Data Items you created in your TnD project*).
3. The EZ Text panels only support the **Number** and **Counter** Tag Data Items.
4. The Number Data item can only be used for Numeric Data Display or Entry you must choose Binary/Int32 for the number to display correctly.
5. The **LED (Bit Read)** and **Buttons (Bit Write)** can only have **Counter** Data items assigned to them. Number Data items will not work.
6. Counter and Number Tags can both be used for data entry and display in the Local and PLC messages.



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7. The PC based EBC project must be in **RUN** mode in order for the panel to communicate with it. If it is not in **RUN** you will get a "*PLC Timeout PLC-X*" error on the EZ Text display.
8. The H2-EBC can support up to three of the H2-SERIO modules they will also be configured the same as the on-board EBC Serial port.

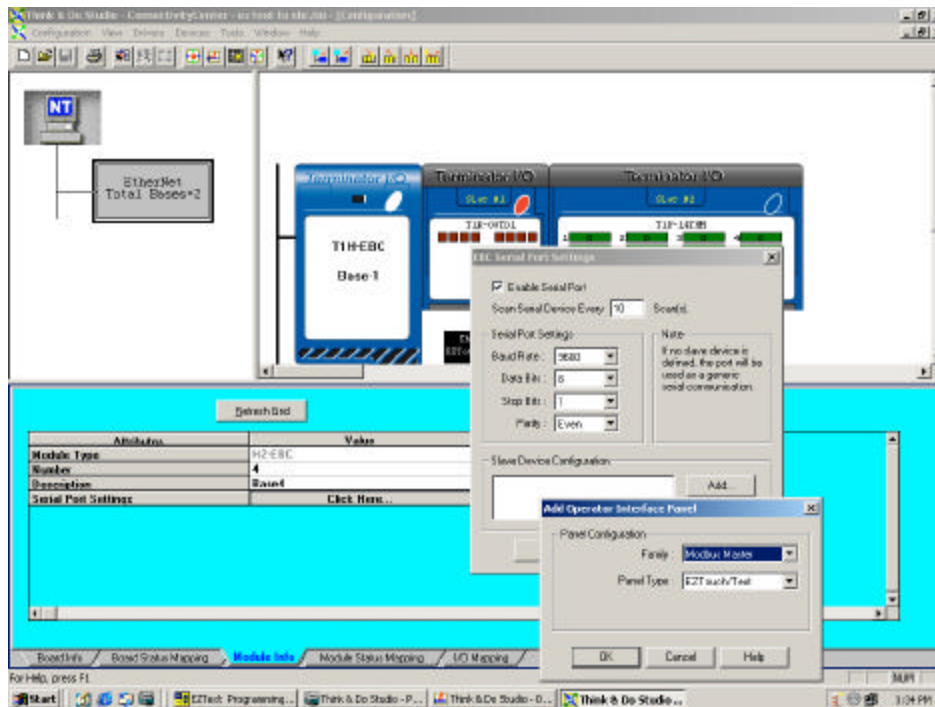
THINK & DO PROJECT

The Entity (T&D) project will be setup the same as any normal PC based project. You will create data items and flow charts as you normally would. In Connectivity Center (*Studio 6.XX*)/ I/O View (5.5) the EBC serial port can only be a **MODBUS Slave**. This will allow the PC based project to talk to the EZ-Text panel. You will need to configure the Serial port settings of the EBC and the EZ Text so they match. The default settings for the EZ Text panel driver are as follows:

<u>BAUD= 9600</u>	<u>PARITY= Even</u>
<u>DATA BITS= 8</u>	<u>STOP BITS= 1</u>
<u>FLOW CONTROL= None</u>	

The settings for the EBC are illustrated below.

The Illustration below assumes you are proficient enough to add an EBC base to your project. From the Module Info tab "Serial Port Settings"> Click Here>Enable Serial port>Add>Modbus Master>EZ Touch/Text>Ok.



Entity Live screen capture



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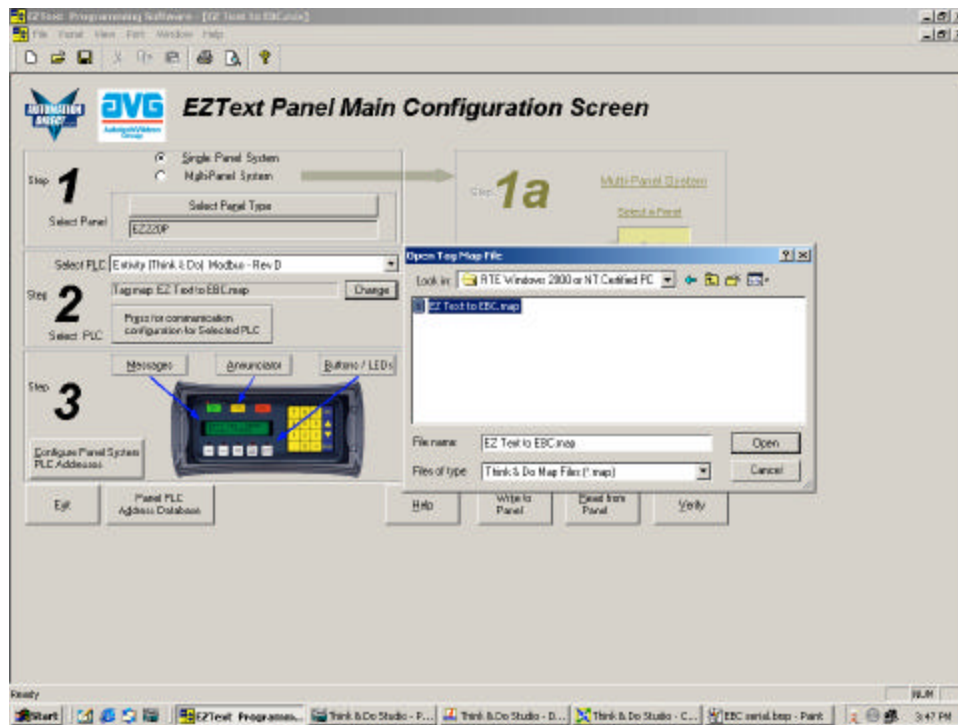
EZ-TEXT PROJECT

Step1 – Open an EZ Text project

Choose *NEW SYSTEM* give the project a name and then save the project. The software will open up to the “ **EZ-Text Panel Main Configuration Screen**”.

In Step1 choose the panel type. In Step 2 you will choose **Entity (Think & Do) Modbus** upon choosing the driver you will be prompted to **Open a Tag MAP file**. You will need to open the folder that contains the MAP file for your project. This file is typically located in the (*RTE Windows 2000 or NT Certified PC*) folder of your project.

The window will look like the following:



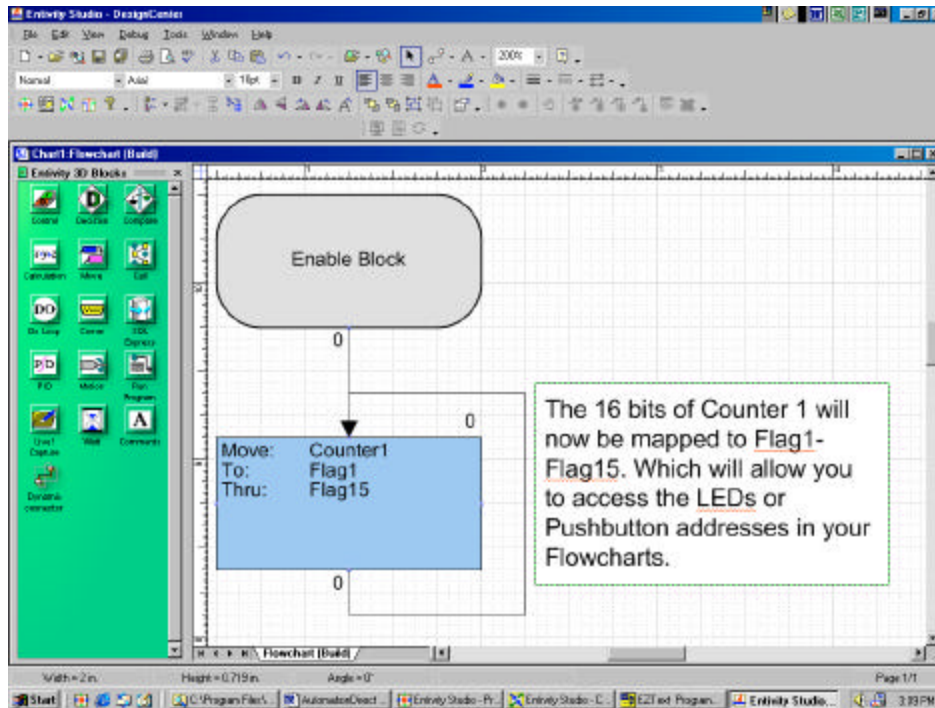


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Step2 - Configure your panel

1. Choose Messages to configure Local and PLC messages.
2. Keep in mind that only Number and Counter Data Items will be selectable for all address areas of the EZ-Text panel's setup.
3. In order to use the (*ANNUNCIATORS*), (*LED PLC WORD*) and the (*BUTTONS PLC WORD*) you will need to create a flow chart in your Project. Use a MOVE Block to MOVE the Number or Counter Data Items to a range of Flag Data Items for each one of Functions listed above.
4. See example below.



Entity Studio screen capture.

Step3 - Write your project to the panel

Once you have setup and configured your Buttons, LEDs, Annunciators, Local and PLC Messages you can write your project to the panel.

1. Put the panel in Setup Mode by pushing the Up and Down Arrow adjust buttons simultaneously.
2. Select *Write To Panel*
3. Click on Verify to compare the program open in EZText Programming Software to the program loaded in the EZText Panel or the EZ Multiplexer.



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Entity MODBUS Address Chart

1. The address ranges depicted in this chart are not modifiable. It is very important that you take into consideration the information in this chart prior to creating your TnD project.
2. When creating the data items that will be used in conjunction with your EZ Text panel it is imperative that the Data Item Addresses fall within this chart. For example: If you create a large project with a lot of Number Data Items and those Numbers exceed beyond address N-1023 they will **NOT** be mapped into your EZ Text project. There are **NO** MODBUS Address equivalents beyond N-1023 as far as TnD is concerned when used with the EZ Text panel.

Note: Only Counter and Number Data Types will import into your EZ-Text project. The Counter data type is available in all versions of Live, and Studio V6.3 and higher. Counters must be enabled in Studio to be available. Refer to your Studio Help file and documentation for more information.

MODBUS OBJECT	MODBUS ADDRESS	THINK & DO DATA TYPE	THINK & DO LOGICAL ID
COILS	00001-04096	OUTPUTS	O-0 to O-4095
COILS	04097-08192	FLAGS	F-0 to F-4095
INPUT STATUS	10001-14096	INPUTS	I-0 to I-4095
HOLDING REGISTERS	40001-42048	COUNTERS	C-0 to C-2047
HOLDING REGISTERS	42049-44096	FLOATS	FP-0 to FP-1023
HOLDING REGISTERS	44097-46144	NUMBERS	N-0 to N-1023

Floats and Numbers use double word addressing with Modbus addresses. Therefore, to address N-O you will use Modbus addresses 44097 & 44098. To address FP-0 you will use Modbus address 42049 & 42050.

Technical Assistance:

If you have Questions regarding this Application Note, please contact us at 770-844-4200 for further assistance.